



Blue Grass Energy

A Touchstone Energy Cooperative 

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RECEIVED
MAR 30 2012
PUBLIC SERVICE
COMMISSION

March 28, 2012

Director of Engineering
Kentucky Public Service Commission
PO Box 615
Frankfort, KY 40602

RE: **ELECTRIC DISTRIBUTION UTILITY ANNUAL RELIABILITY REPORT**

Enclosed is Blue Grass Energy's Annual Reliability Report for 2011. If you have any further questions, please feel free to contact me.

Sincerely,



Chris Brewer
Blue Grass Energy
Vice President Power Delivery

IT IS THEREFORE ORDERED that:

1. All jurisdictional distribution utilities shall file annual reliability reports with the Commission as described in this Order. Reports may be provided on paper or on CD, DVD, USB memory card, or 3.5" diskette in .xls, .doc, or .pdf format.

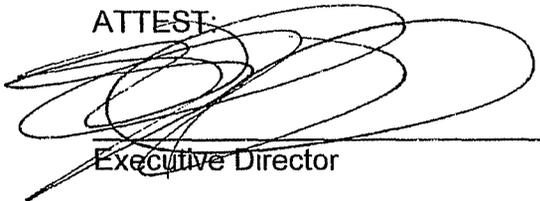
2. Jurisdictional distribution utilities shall develop a vegetation management plan as described in this Order and shall file a copy of the plan with the Commission within 60 days of the date of this Order. Plans may be provided on paper or on CD, DVD, USB memory card, or 3.5" diskette in .xls, .doc, or .pdf format.

3. Reports and plans shall be addressed to: Director of Engineering, Public Service Commission, P.O. Box 615, Frankfort, Kentucky 40602.

Done at Frankfort, Kentucky, this 26th day of October, 2007.

By the Commission

ATTEST:



Executive Director

Electric Distribution Utility Annual Reliability Report

SECTION 5: OUTAGE CAUSE CATEGORIES Excluding MED

CAUSE CODE DESCRIPTION	SAIDI VALUE	CAUSE CODE DESCRIPTION	SAIFI VALUE
Lightning	5.1.1 24.73	Power Supplier	5.2.1 0.446
Power Supplier	5.1.2 23.18	Lightning	5.2.2 0.239
Trees - Non ROW	5.1.3 14.90	Equipment Fault	5.2.3 0.146
Equipment Fault	5.1.4 14.70	Unknown	5.2.4 0.108
Unknown	5.1.5 11.53	Trees - Non ROW	5.2.5 0.091
Deterioration	5.1.6 6.46	Small Animal S.C.	5.2.6 0.082
Public Accident	5.1.7 5.69	Wind-not trees	5.2.7 0.062
Trees - ROW	5.1.8 5.17	Deterioration	5.2.8 0.056
Small Animal S.C.	5.1.9 4.88	Public Accident	5.2.9 0.037
Wind-not trees	5.1.10 4.72	Trees - ROW	5.2.10 0.026

SECTION 6: WORST PERFORMING CIRCUITS

CIRCUIT IDENTIFIER	SAIDI VALUE	MAJOR OUTAGE CATEGORY
Bridgeport 134	6.1.1 1,120	Trees - Non ROW
Bridgeport 144	6.1.2 413	Power Supplier
Newby 124	6.1.3 407	Small Animal S.C.
Bridgeport 124	6.1.4 400	Power Supplier
Ninevah 144	6.1.5 398	Trees - Non ROW
Hickory Plains 154	6.1.6 396	Equipment Fault
Alcan 154	6.1.7 376	Equipment Fault
Bridgeport 114	6.1.8 355	Power Supplier
Headquarters 124	6.1.9 329	Power Supplier
Jacksonville 124	6.1.10 283	Lightning

CIRCUIT IDENTIFIER	SAIFI VALUE	MAJOR OUTAGE CATEGORY
Bridgeport 114	6.2.1 0.088	Power Supplier
Bridgeport 124	6.2.2 0.074	Power Supplier
Bridgeport 134	6.2.3 0.055	Trees - Non ROW
Cynthiana 114	6.2.4 0.053	Equipment Fault
Bridgeport 144	6.2.5 0.050	Power Supplier
Four Oaks 124	6.2.6 0.048	Power Supplier
Newby 124	6.2.7 0.031	Small Animal S.C.
Lees Lick 134	6.2.8 0.028	Unknown
Headquarters 124	6.2.9 0.027	Power Supplier
Millersburg 114	6.2.10 0.026	Power Supplier

Blue Grass Energy

	SAIDI					CAIDI	SAIFI
	All	MED	PS	Sched	Other	All	All
2001	111.5	23.7	1.6	2.1	84.1	83.0	1.34
2002	156.7	33.0	16.4	0.9	106.4	105.6	1.48
2003	1133.2	1033.4	8.4	0.9	90.5	504.5	2.25
2004	310.9	162.0	43.8	0.4	104.7	158.8	1.96
2005	108.6	0.0	15.9	0.7	92.0	91.1	1.19
2006	124.4	0.0	0.6	2.5	121.2	113.5	1.10
2007	147.1	41.5	6.4	2.9	96.4	120.2	1.22
2008	169.4	67.3	11.8	1.1	89.2	141.3	1.20
2009	2175.1	2068.1	5.2	4.2	97.7	1205.3	1.80
2010	133.9	15.3	21.4	0.8	96.5	108.1	1.24
2011	162.8	41.5	23.2	0.5	97.5	111.8	1.46
2003-2007 avg.	364.8	247.4	15.0	1.5	101.0	197.6	1.54
2004-2008 avg.	172.1	54.1	15.7	1.5	100.7	125.0	1.33
2005-2009 avg.	544.9	435.4	8.0	2.3	99.3	334.3	1.30
2006-2010 avg.	550.0	438.4	9.1	2.3	100.2	337.7	1.31
2007-2011 avg.	557.7	446.7	13.6	1.9	95.4	337.3	1.39

Major Event Days

2005	2006	2007	2008	2009	2010	2011
None	None	4/3/2007 8/16/2007	2/6/2008 6/10/2008	1/27-2/03/09 2/11/2009 5/8/2009 6/11/2009	5/27/2010	5/25/2011

Years over which data used

Year T _{MED} used for	T _{MED}	
2000-2004	2005	10.61
2001-2005	2006	11.40
2002-2006	2007	12.69
2003-2007	2008	12.09
2004-2008	2009	10.74
2005-2009	2010	11.50
2006-2010	2011	11.46



DISTRIBUTION RIGHT-OF-WAY VEGETATION MANAGEMENT 2012 PLAN/ 2011 PLAN REVIEW

March 2012

**Prepared by
Environmental Consultants, Inc.
520 Business Park Circle
Stoughton, WI 53589**

Blue Grass Energy Vegetation Management Plan

2011 Review of Plan Implementation

Blue Grass Energy developed a formal plan to manage the maintenance of vegetation on distribution rights-of-way (ROW) in 2007/2008. The plans goals were established to provide excellent member service, maintain current tree related reliability, and look for opportunities to increase production and reduce program cost. These plans were continued and improved into 2011.

As stated in the previously submitted Vegetation Management Plan, the plan may be modified from time-to-time based on performance as measured by tree-related service reliability and evaluations of member satisfaction with service reliability. Specific reliability metrics may include Tree SAIFI, trends in customer minutes interrupted by tree-related causes and tree-caused primary interruptions per 100 line miles as internal benchmarks of program performance over time. A Tree-Caused Outage Report summarizes these reliability criteria and is regularly reviewed and monitored daily. Upon reporting of tree related outages a field investigation is conducted to determine the root cause.

2009-2010 Vegetation Management Strategy

SCHEDULED MAINTENANCE AND CLEARANCE

Blue Grass Energy provides electric service to over 55,000 members through a network of over 4,500 miles of distribution line. Blue Grass Energy uses a cyclic approach to preventive electric distribution ROW. Different circuits or portions of circuits may be scheduled on different cycles based on site conditions, sensitivity of the line to interruptions caused by trees or criticality of the line. The maintenance cycle for tree removal, tree pruning or brush control may be the same or different for a given scheduling unit.

As illustrated in Table 1, Blue Grass Energy completed 31 distribution circuits in 2011 for a total of 842 miles of distribution line. In 2012, there are 23 distribution circuits scheduled for a total of 886 miles. The varying site conditions determine the cost and cause completed miles to vary by year.

Table 1. Blue Grass Energy R/W Miles Scheduled vs. Completed

Maintenance Year	2009	2010	2011	2012
Scheduled	700	678	874	886
Completed	730	684	842	TBD

HISTORICAL EXPENDITURES

Historical Blue Grass Energy program costs for ROW maintenance are presented in Table 2. Expenditures for ROW maintenance were \$2,723,799 in 2010. The 2011 expenditures of \$2,826,987 represents an 4% percent increase over 2010 expenditures.

Table 2. Historical Vegetation Management Budget/ Expenditure Information

Vegetation Management Information

	<u>2010</u>	<u>2011</u>	<u>2012</u>
Total Budget	\$2,568,500	\$2,847,583	\$2,909,003
Total Actual	\$2,723,799	\$2,826,987	TBD
Trim Budget	\$2,061,922	\$2,326,032	\$2,126,592
Trim Actual	\$2,213,853	\$2,043,932	TBD
Miles	684	842	886
\$/Mile	\$3,014.51	\$2,661.36	\$2,400.00
Spray Budget	\$75,834	\$78,109	\$78,110
Spray Actual	\$75,834	\$76,292	TBD
Miles	709	682	
\$/Mile	\$106.96	\$108.01	

RELIABILITY

In 2008, Blue Grass Energy developed and implemented an outage investigation process to better understand the cause of tree failures. The data was again used in 2011 to identify species failure rates and help plan future scheduled and non scheduled work to eliminate potential outages. The investigation of all tree related outages will continue through 2012 to collect data on major outage categories.

Historical Blue Grass Energy tree caused outages are illustrated in Table 3.

Table 3. Number of Tree-Caused Outages on the Blue Grass Energy System

District	2004	2005	2006	2007	2008	2009	2010	2011
Nicholasville	40	21	30	66	29	32	24	20
Madison	61	18	21	39	63	64	26	7
Lawrenceburg	60	17	22	48	44	37	37	26
Harrison	<u>47</u>	<u>26</u>	<u>26</u>	<u>51</u>	<u>38</u>	<u>24</u>	<u>34</u>	<u>15</u>
TOTALS	208	82	99	204	174	157	121	68

2011 VEGETATION MANAGEMENT PLAN REVIEW

Changes were accomplished in 2011 to improve the ROW management plan. The “Distribution Right-Of-Way Vegetation Management Plan” submitted March 2011 reiterated in detail the processes that were built into the plan.

Listed below are some of the new and continued process improvements in 2012:

1. Continuation of Formal Contractor Evaluation Program. Each contractor will be rated on nine qualitative categories such as customer complaints, quarterly mileage goals, exceptions/ omissions, quality/standards, tools/equipment, unscheduled interruptions/OSHA LWD, contractor cooperation & communication, crew professionalism, and data accuracy.
2. Yearly Revision of formal program policies and procedures and assurance of consistent implementation throughout the system to include additional detailed requirements.
3. Continued yearly revision of a general 5-6 year maintenance cycle for the system based on collected field data. In areas where standard clearances cannot be consistently achieved (e.g., subdivisions), mid cycle assessments will be conducted and cycles adjusted based on those findings. Recommended cycle lengths are guidelines.
4. ISA Certified Arborist Utility Specialist supervisory personnel have adequate utility vegetation management technical expertise and a qualified ISA Certified Assistant Arborist is on staff.
5. Selective use of herbicides to control resprouting from the stumps of removed deciduous trees.
6. Written notification of property owners of the intent to prune trees and requirement of written permission for “yard” tree removals. We always strive to not allow property owners to influence pruning clearances.
7. Continuation of the separation of tree removals from the firm price mileage contract. This practice has promoted aggressive “problem” tree removal and helped ensure that per-mile unit price bids are accurate and cost effective. It also reduced the tendency of the contractor to avoid removals.
8. The crew labor and equipment complements were adjusted throughout the year to maximize cost effectiveness.
9. Revised and improved the formal work monitoring and completion process. Each circuit is individually and entirely audited by ROW supervisory personnel to ensure specifications for clearance and pruning quality are achieved.
10. Records were maintained of key aspects of the ROW vegetation management program to document program performance. This data provides information necessary for ongoing program management and circuit scheduling.

2012 VEGETATION MANAGEMENT PLAN

Blue Grass Energy plans to partner with the following contractors for 2012:

- Trees, Inc.
- Osmose Utilities Services, Inc.

In addition to continuing the Distribution Right-Of-Way Vegetation Management Plans outlined for 2012 we intend to utilize the following key objectives in the upcoming year:

- Continue Formal Crew Field Audit Evaluation process
- Uphold National Arbor Day Tree Line USA standards
- Continue to uphold ANSI A300 pruning and Z133 safety standards
- Continue to evaluate and increase production and quality with established and new workforces
- Further inspection and reduction of unnecessary reactive maintenance
- Continued customer service process improvements

Appendix

ROW VEGETATION MAINTENANCE CLEARANCE CYCLE SCHEDULING STRATEGY

The following table summarizes the Blue Grass Energy ROW vegetation maintenance scheduling strategy. Individual circuits may be accelerated or deferred based on assessment of field conditions and operating performance.

Circuit Description	Primary Cycle Length (Years)	Mid-cycle Inspection/selective Tree Maintenance (Years)
Feeder Multi-phase	5-6	2 to 3
Feeder Laterals (single-phase)	5-6	